



Mote Marine Laboratory / Florida Keys National Marine Sanctuary
Coral Bleaching Early Warning Network
Current Conditions Report #20150911



Updated September 11, 2015

Summary: Based on climate predictions, current conditions, and field observations, the threat for mass coral bleaching within the FKNMS remains **HIGH**.

NOAA Coral Reef Watch Current and 60% Probability Coral Bleaching Alert Outlook September 10, 2015 (experimental)

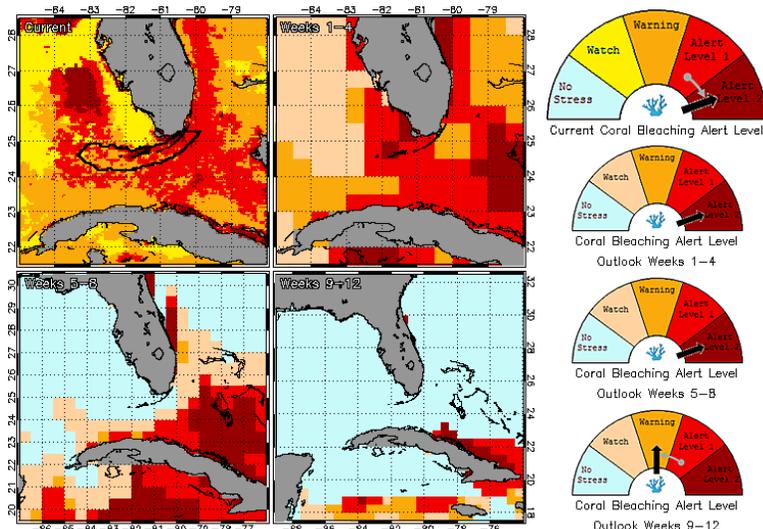


Figure 1. NOAA's 5 km Experimental Current and 60% Probability Coral Bleaching Alert Outlook Areas through November 2015 (Updated September 10, 2015).
http://coralreefwatch.noaa.gov/vs/gauges/florida_keys.php

Weather and Sea Temperatures

According to the newly released NOAA Coral Reef Watch (CRW) experimental 5 kilometer (km) Satellite Current and 60% Probability Coral Bleaching Alert Area, most areas of the Florida Keys National Marine Sanctuary (FKNMS) are under a Coral Bleaching Alert Level 1, with the potential for continual bleaching warnings and alerts if sea temperatures remain elevated during the next month (Fig. 1).

Recent remote sensing analysis by NOAA's CRW program indicates that the entire Florida Keys region continues to experience increasing thermal stress. NOAA's new experimental 5 km Coral Bleaching HotSpot Map (Fig. 2), which illustrates current sea surface temperatures compared to the average temperature for the warmest month, shows elevated temperatures for much of the Florida Keys over the last 4 weeks. Similarly, NOAA's experimental 5 km Degree Heating Weeks (DHW) map, which illustrates how much heat stress has built up over the past 12 weeks (Fig.3), indicates continued accumulating temperature stress throughout the Florida Keys region.

NOAA's Integrated Coral Observing Network (ICON) monitoring stations, which provide near real time *in-situ* sea temperature data along the outer reef tract throughout the Florida Keys, confirms that temperatures continue to exceed 30°C (Fig.4) along with prolonged periods of lighter winds observed during the majority of the past two weeks (Fig 5). *In-situ* sea temperature data is currently only available at Molasses Reef and Fowey Rocks. Sombrero Key is not recording any data at this time. Mote Marine Laboratory will continue to monitor the NOAA HotSpot maps, DHW maps, and ICON sea temperature data from NOAA monitoring stations on a weekly basis for the remainder of the bleaching season.

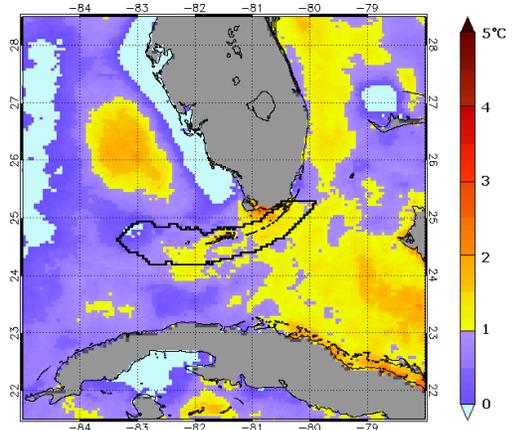


Figure 2. NOAA's Experimental 5km Coral Bleaching HotSpot Map for Florida September 10, 2015.
<http://coralreefwatch.noaa.gov/regions/florida.php>

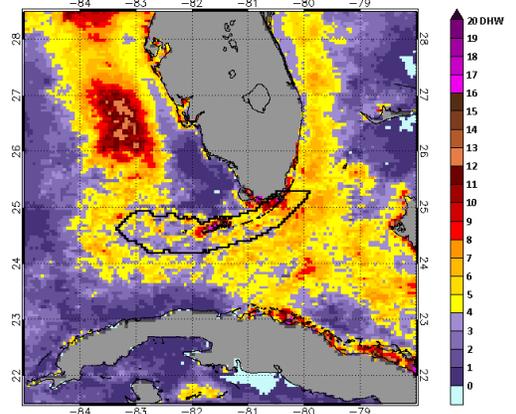


Figure 3. NOAA's Experimental 5km Degree Heating Weeks Map for Florida September 10, 2015.
<http://coralreefwatch.noaa.gov/regions/florida.php>

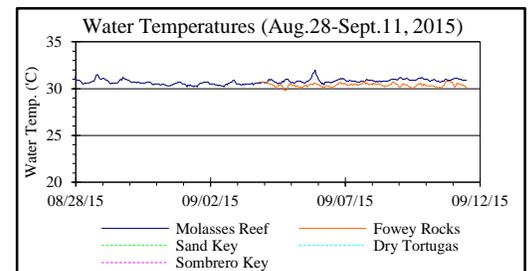


Figure 4. *in-situ* sea temperature from NOAA/ICON monitoring stations (Aug. 28 - Sept. 11, 2015).

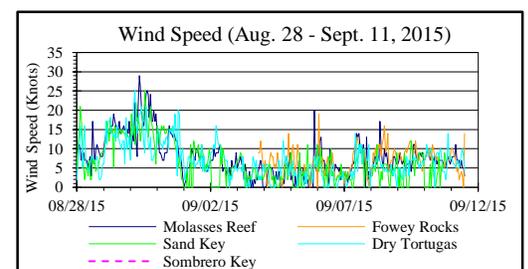


Figure 5. Wind speed data from NOAA/ICON monitoring stations (Aug. 28 - Sept. 11, 2015).



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Current Coral Conditions

A total of 55 BleachWatch Observer reports were received during the last two weeks (Fig. 6), with 42 reports indicating isolated colonies exhibiting signs of paling and partial bleaching and an additional 13 reports noting significant bleaching. The overall percentage of corals exhibiting signs of thermal stress at sites visited ranged from 31-75% to several sites in the Middle Keys at 76-100% affected.



Photo: Vanessa Brinkhuis, FWRI

Figure 7. Bleached *Muricea muricata* offshore Marathon on 9/2/15.

Paling and partial bleaching observations consisted of nearly all species including Brain corals, Encrusting/Mound/Boulder corals, Flower corals, Branching/Pillar corals, Fleshy corals, and Leaf/Plate corals. Other observations included bleached *Palythoa spp.*, Fire Coral and Gorgonians (Fig. 7) as

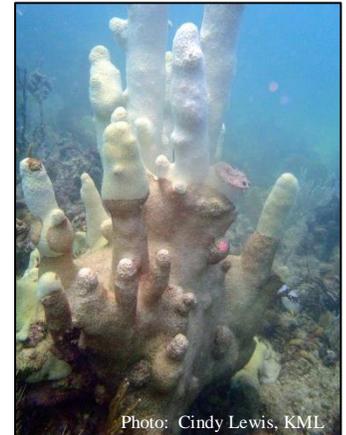


Photo: Cindy Lewis, KML

Figure 8. Bleaching *Dendrogyra cylindrus* with White Plague Disease off of Bahia Honda on 9/10/15.

well as several reports of Black Band and White Plague Disease (Fig. 8) affecting various corals throughout the Florida Key's Reefs.

These observations, combined with continued elevated temperatures and accumulated thermal stress, indicate that the onset of a mass bleaching event is likely at this time; however, additional field observations are needed to determine the range, duration, and severity of coral bleaching impacts as this event continues to develop.

BleachWatch Reports for August 28 – September 11, 2015

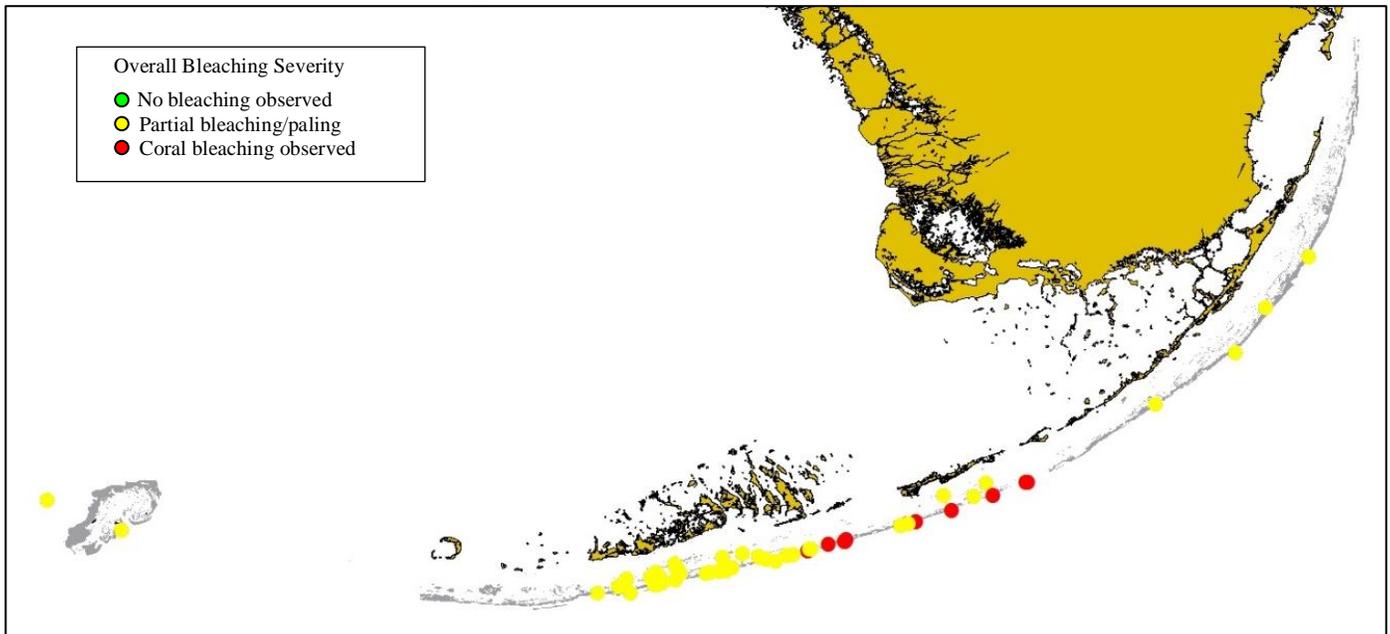


Figure 6. Overview of BleachWatch observer reports submitted from August 28 – September 11, 2015.

For more information about the BleachWatch program, or to submit a bleaching observation, contact:

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<http://www.mote.org/bleachwatch>

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